NEW YORK CITY SCHOOL CONSTRUCTION AUTHORITY TARGETED RISK-BASED INDOOR AIR SAMPLING PLAN AT NINE (9) SCHOOLS FEBRUARY 27, 2017

OBJECTIVE

As part of the PCB Pilot Study Final Preferred Citywide Remedy, this Targeted Risk-Based Indoor Air Sampling Plan has been prepared to provide the approach to conduct PCB air sampling at nine (9) schools. This plan provides the strategy for conducting a round of PCB air sampling from representative primary and transitory spaces under conditions that are typical for normal daily operation of the schools. The nine (9) schools selected for this sampling include:

- J.H.S. 296-562K
- P.S. 145M
- P.S. 161M
- P.S. 198M
- P.S./I.S. 45K
- I.S. 302K
- P.S. 83M
- Benjamin N. Cardozo H.S. (415Q)
- P.S. 41X

Four (4) of the nine (9) schools (J.H.S. 296-562K, P.S. 145M, P.S. 161M, and P.S. 198M) have been identified as being similar to P.S. 199M. Five (5) of the schools (P.S./I.S. 45K, I.S. 302K, P.S. 83M, Benjamin N. Cardozo H.S. (415Q), and P.S. 41X) have been selected from the overall population of NYC schools based on the criteria established in the Final Citywide Remedy where there are suspected or known to be PCBs. The process by which the schools were selected is discussed in detail below.

SCHOOLS SELECTION PROCESS

The four (4) schools which were selected as being similar to P.S. 199M are school buildings which formerly contained T12 and/or HID lighting that are either 1) constructed by Wilaka Construction Corporation, or 2) contained similar construction characteristics as P.S. 199M (i.e., constructed with concrete framing and containing an interior courtyard). Based on this selection criteria, the following four schools similar to P.S. 199M were identified:

Table 1 – Schools Similar to P.S. 199M

Building	Address	School Name	GC	Framing Type	Interior Courtyard?
J.H.S. 296-562K	125 Covert St. Brooklyn, NY	Evergreen Middle School For Urban Exploration	Planet Const.	Concrete	Yes (above auditorium and cafeteria)
P.S. 145M	150 West 105 St. New York, NY	Bloomingdale School	Wilaka Const.	Concrete & Steel	Yes
P.S. 161M	499 West 133 St. New York, NY	Pedro Albizu Campos	Wilaka Const.	Concrete & Steel	Yes (above auditorium)
P.S. 198M	1700 3rd Ave. New York, NY	Isador E. Ida Straus	Caristo Const.	Concrete	Yes (above auditorium)

The five additional schools were selected, as described below, by developing a list of candidate schools and evaluating each against the criteria presented in the Final Citywide Remedy.

1. The continued presence of old yet intact caulk:

   Based upon a records review, there are approximately 299 schools where PCB caulk (PCBs ≥ 50 parts per million) has been identified.

   First, approximately 345 Capital Improvement Projects (CIP) at 281 schools, managed by SCA, confirmed the presence of PCB caulk. In addition, through the BMPs, DSF identified 18 schools with PCB caulk. All of the identified caulk has been or will be removed in each of these 299 schools.

   Of these candidate 299 schools where PCB caulk was identified by SCA or DSF, 171 schools had only exterior PCB caulk and were thus excluded from further consideration. This resulted in 128 schools where the presence of interior PCB caulk was confirmed. Records indicated that the identified interior PCB caulk has already been removed in 114 of these 128 schools.

   Therefore, interior PCB caulk was identified as being present (the identified caulk has not yet been remediated) in 14 schools. Six (6) of the schools were then excluded because identified PCB caulk existed only in limited areas of the building (i.e. only in a basement), or in limited quantities (less than 50 linear feet). Note that the construction and/or renovation projects associated with these six (6) schools are currently active and the identified PCB caulk will be remediated according to the respective project schedules.

   This leaves eight (8) candidate schools with old, yet intact interior PCB caulk which has not yet been remediated.

2. The prior existence of lighting suspected to contain PCBs found through lighting upgrades or ballast failure incidents

   Of the eight (8) candidate schools, all formerly contained T12 or HID light ballasts, and thus all schools share the prior existence of lighting suspected to contain PCBs. One school that had its light fixture replaced in mid- to late-2016 was excluded from consideration because the recent work is less likely to result in air sampling results that are representative of typical public schools.

3. The capacity (e.g., available air exchange) and condition of the ventilation system

   The capacity and condition of the ventilation system was evaluated at each of the seven (7) resulting schools that met the previous criteria. Seven (7) schools with various types of ventilation systems in various states of operational condition were identified.

4. The age of the relevant building taking into account other information such as the presence of unit ventilators and if any renovations were done to the school building during the relevant time period between 1950 and 1978

   Next, the dates of original construction, renovation, or addition on each of the remaining seven (7) schools were confirmed to have been performed during the relevant time period of between 1950 and 1978.

5. The ages of students served

   As a focus of the study is to include schools that serve students of various ages ranging from pre-kindergarten to high school, two primary schools (P.S. 41X and P.S. 83M), two primary/intermediate schools (P.S./I.S. 45K and I.S. 302K), and one high school (Benjamin N. Cardozo H.S. 415Q) were selected.

Based on these selection criteria, the following five schools were identified:

Table 2 – Schools with PCB Caulk

Building	Address	Type of Ventilation	Location of Interior PCB Caulk	Date of Construction	Age of Students
P.S./I.S. 45K	84 Schaffer St., Brooklyn, NY	Gym, Auditorium & Cafeteria supply & exhaust ventilation	1st flr-stair A & B, custodian's office, auditorium lobby, main office & cross corridor doors. 2nd floor-stair A, B & D, cross corridor doors, classrooms 201, 217, 219, 221A, 223A, 237 & 239	1965	Pre-K-8th Grade
I.S. 302K	350 Linwood St., Brooklyn NY	Gym, Auditorium Cafeteria, & Library heating system with supply & exhaust. House exhaust, some window mounted A/C units	Door frame caulk, inner vestibules on 1st floor, Exits A, B, C & D (both sides of doors)	1970	K - 8th Grade
P.S. 83M	219 E. 109th St., New York, NY	Gym & Auditorium supply & exhaust & House exhaust, window mounted A/C units.	1st, 2nd & 3rd floor corridor door frame caulk, 2nd floor caulk for toilet fixtures.	1964	Pre-K - 5th Grade
Benjamin N. Cardozo High School (415Q)	57-00 223rd St., Bayside, NY	Library, Teacher's Cafeteria, Science Lab & Auditorium central A/C, heating system with supply & exhaust. Gymnasium & Cafeteria heating system with supply & exhaust. House exhaust, some window mounted A/C units	Door frame caulk, outside rooms B66, B67, Exits 13 & 14 in basement, 1st floor stair C, corridor outside rooms 204 & 210, 3rd floor stair A	1967	9-12th Grade
P.S. 41X	3352 Olinville Avenue,	Gym, Auditorium & Cafeteria supply & exhaust, house exhaust	Basement - window frame/louver caulk; basement green	1905 & 1963	K- 5th Grade

Building	Address	Type of Ventilation	Location of Interior PCB Caulk	Date of Construction	Age of Students
	Bronx, NY	ventilation, window mounted A/C units and univents for 1963 kindergarten classes	radiator caulk & white and clear radiator caulk on 1st-4th floors		

AIR SAMPLING PLAN

A total of nine (9) PCB indoor air samples will be collected from representative primary and transitory spaces, with high concentrations of retrofitted light fixtures, within each of the nine (9) school buildings. In addition to the area samples, quality assurance sampling will include the collection of one front/back sample to evaluate sampling collection efficiency, one duplicate sample, and one ambient air sample for comparison purposes. Additionally, one field spike sample and one field blank sample will be submitted for quality control purposes. Following are the proposed sampling locations for each of the schools:

J.H.S. 296-562K:

- Primary spaces – classrooms 119, 211, 239, 309, 331, 352, kindergarten 363, and gymnasium.
- Transitory space –3rd floor north corridor.

P.S. 145M:

- Primary spaces – classroom 129, Pre-K 138, kindergarten 215, 228, 316, 328, cafeteria, and room 307 (library).
- Transitory space – 1st floor corridor

P.S. 161M:

- Primary spaces – kindergarten 109, classrooms 127, 135, 145, 118, gymnasium, cafeteria, and room 108 (library).
- Transitory space – corridor outside the general office.

P.S. 198M:

- Primary spaces – Pre-K 107, classroom 118, kindergarten 131, 141, 211, 219, 231, and cafeteria.
- Transitory space – 2nd floor corridor.

P.S./I.S. 45K:

- Primary spaces – kindergarten 103, classrooms 201,237, 303, 311, and auditorium 110 and library 125.
- Transitory spaces –1st floor corridor outside auditorium and 2nd floor center corridor.

I.S. 302K

- Primary spaces – Room 116 (library), cafeteria, auditorium, classrooms 209, 333A, 360A, 433B & 460E.
- Transitory space – 1st floor corridor outside room 155

P.S. 83M:

- Primary spaces – kindergarten 110, classrooms 123, 206, 223, 304, 323, and gymnasium.
- Transitory spaces –1st and 3rd floor corridors.

Benjamin N. Cardozo H.S. 415Q

- Primary spaces – Cafeteria, auditorium, room 216 (library), classrooms B061, 245, 346 & 355.
- Transitory spaces – Basement corridor outside room B052 and 3rd floor corridor outside room 319.

P.S. 41X

- Primary spaces – kindergarten B-11, classrooms 101, 119, 201, 301, 403 and cafeteria.
- Transitory spaces – 1st floor and 4th floor corridors.

Sampling will be performed with the ventilation equipment operational with doors and windows opened or closed to represent typical operating conditions for the particular school considering the outside temperature during the sampling event. Temperature readings will also be collected and data logged throughout the sampling period in each of the sampling locations.

SAMPLING AND ANALYTICAL METHODS

Air samples will be collected in accordance with USEPA Method TO-10A and analyzed by Pace Analytical Laboratory in accordance with USEPA SW846 Method 8082 with five peak match to achieve a detection limit of approximately 50 nanograms per cubic meter of air (ng/m^3). Samples will be analyzed using standard turnaround time. Data acceptability will be based upon less than 10% flow rate drift during sample collection and review of blank and surrogate sample results. Data not meeting these criteria will be voided.

RESULTS INTERPRETATION AND FOLLOW-UP ACTIONS

The results of the PCB air samples will be compared against the EPA's 2015 "Exposure Levels for Evaluation of PCBs in School Indoor Air" guidelines, based on the ages of building occupants. Following receipt of air sample results, laboratory analytical data will be provided to, and reviewed with, EPA. If all of the initial sample results within a particular school indicate that airborne PCB concentrations are below the applicable guidance levels, the sampling will be considered representative for that school and further evaluation will be considered unnecessary.

If airborne PCB concentrations are found to be in excess of the applicable guidance levels, the following procedures will be implemented:

1. Perform a thorough visual inspection of the areas with elevated results to evaluate physical conditions, the ventilation system(s) and to verify that the sampling was representative of normal operating conditions;
2. Develop a protocol to perform confirmatory air sampling, and;
3. If the elevated results are confirmed, perform a material inspection to identify any visible suspect PCB materials or other sources in the area(s) where elevated levels were found.